

Employing Ionomer Membrane Technology to Extract Water from Brine, Phase I

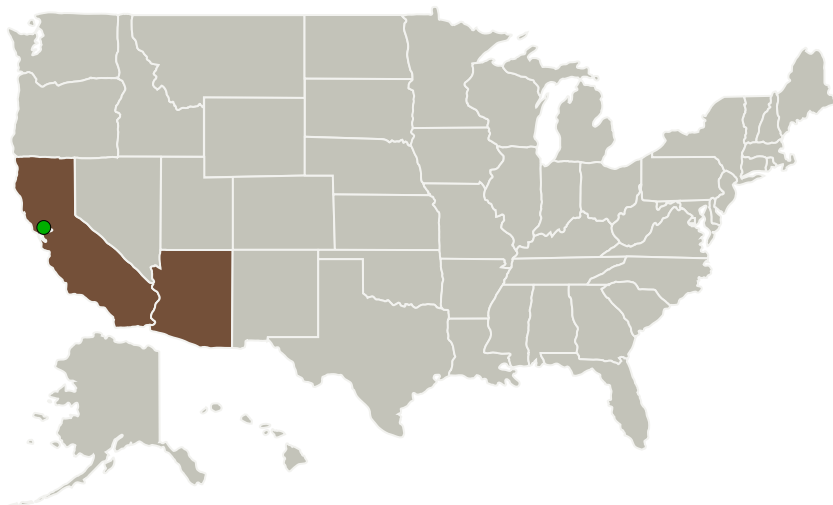
Completed Technology Project (2011 - 2011)



Project Introduction

Paragon Space Development Corporation proposes the use of an microporous-ionomer membrane pair to improve the robustness and effectiveness of membrane-based water separation processes. Improved robustness and effectiveness will be evident through (1) reduced loading on the downstream post processor due to the ionomer's unique property of selective permeability, and (2) inclusion of a backup barrier between the retentate and permeate. The microporous membrane's function is to prevent liquid wastewater from direct contact with the ionomer, a condition that would reduce the effectiveness of the ionomer. The ionomer's unique characteristic of selective permeability suggests a possible role in water purification processes. This activity is accomplished by means of the sulfonic acid groups. It is this property that we wish to exploit.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Paragon Space Development Corporation	Lead Organization	Industry	Tucson, Arizona
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California



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Primary U.S. Work Locations

Arizona

California

Project Transitions

 **February 2011:** Project Start

 **August 2011:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140663>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Paragon Space Development Corporation

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

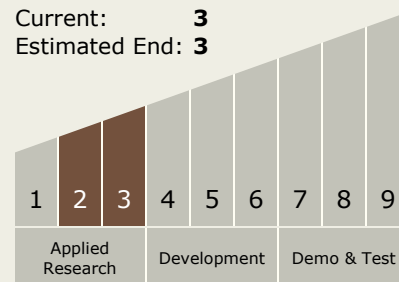
John Straus

Technology Maturity (TRL)

Start: **2**

Current: **3**

Estimated End: **3**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
 - └ TX06.1.2 Water Recovery and Management

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System